Rice Valley Groundwater Basin

- Groundwater Basin Number: 7-4
- County: Riverside, San Bernardino
- Surface Area: 189,000 acres (295 square miles)

Basin Boundaries and Hydrology

This groundwater basin underlies Rice Valley in northeast Riverside and southeast San Bernardino Counties. Elevation of the valley floor ranges from about 675 feet above sea level near the center of the valley to about 1,000 feet along the outer margins. The basin is bounded by nonwater-bearing rocks of the Turtle Mountains on the north, the Little Maria and Big Maria Mountains on the south, the Arica Mountains on the west, and by the West Riverside and Riverside Mountains on the east. Low-lying alluvial drainage divides form a portion of the basin boundaries on the northwest and northeast, and the Colorado River bounds a portion of the basin on the east. Maximum elevations of the surrounding mountains range to about 2,000 feet in the Arica Mountains, about 3,000 feet in the Big Maria Mountains, and 5,866 feet at Horn Peak in the Turtle Mountains (Bishop 1963; Jennings 1967; USGS 1971a, 1971b, 1983a, 1983b, 1983c).

Annual average precipitation ranges from about 3 to 5 inches. Surface runoff from the mountains drains towards the center of the valley, except in the eastern part of the valley, where Big Wash drains to the Colorado River (USGS 1971a, 1971b, 1983a, 1983b, 1983c).

Hydrogeologic Information

Water Bearing Formations

Alluvium is the water-bearing material that forms the basin and includes unconsolidated Holocene age deposits and underlying unconsolidated to semi-consolidated Pleistocene deposits (DWR 1954, 1963). Holocene alluvium is composed of poorly sorted gravel, sand, silt, and clay that typically lie above the water table (DWR 1963). Pleistocene alluvium is composed of well sorted sand, interbedded with gravel, silt, and clay that, where saturated, yields water freely to wells (DWR 1963).

Recharge and Discharge Areas

Recharge to the basin is derived chiefly from the infiltration of runoff through alluvial deposits at the base of the surrounding mountains. Additional recharge may be subsurface inflow from Ward Valley (DWR 1963). Groundwater moves towards the center of the basin and northeast into Vidal Valley Groundwater Basin (Thompson 1929; DWR 1954).

Groundwater Level Trends

Groundwater levels near the center of the basin remained stable from 1962 through 1983 and depth to water ranged from about 150 to 153 feet below the ground surface. In the southwestern part of the basin, water levels declined slightly from 1962 through 1984 and depth to water ranged between 285 to 286 feet below the surface.

Groundwater Storage

Groundwater Storage Capacity. Total storage capacity is estimated to be about 2,280,000 af (DWR 1975) and 125,000 af (MWD 2001).

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

Natural recharge is estimated at about 500 af/yr (DWR 1975). Extractions in 1952 were estimated at about 1 af (DWR 1975).

Groundwater Quality

Characterization. Groundwater character is sodium chloride-sulfate or sodium chloride-bicarbonate. Five wells tested for groundwater quality show TDS content levels ranging from 662 to more than 2,600 mg/L (MWD 2001). The average TDS concentration is about 1,900 mg/L.

Impairments. The quality of the groundwater is generally impaired by elevated levels of TDS. At one well, fluoride content was 1.8 mg/L and boron content was 2.8 mg/L, which may indicate local impairment of the groundwater. Chloride, TDS, fluoride, and sulfate concentrations are high for domestic use and boron levels are high for irrigation use (DWR 1975).

Well Production characteristics

	Well yields (gal/min)
Municipal/Irrigation	Range: to 65 (DWR 1975)
	Total depths (ft)
Domestic	
Municipal/Irrigation	

Active Monitoring Data

Agency	**Parameter**	**Number of wells /measurement frequency**
	Groundwater levels	NKD
	Miscellaneous water quality	NKD
Department of Health Services and cooperators	Title 22 water quality	0

Basin Management

Groundwater management:
Water agencies
Public
Private

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